BASOV, N.G.; MARKIN, Ye.P.; NIKITIN, V.V.

Some characteristics of an optical maser operating on a Ne and He mixture with a λ = 3.39 micron. Radiotekh. i elektron. 8 no.12: 2084-2086 D '63. (MIRA 16:12)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.

BASOV, N.G.; MARKIN, Ye.P.; NIKITIN, V.V.

Output power of a neon-helium laser as a function of various parameters. Opt. i spektr. 15 no.3:436-438 S '63.
(MIRA 16:10)

BAGAYEV, V.S.; BASOV, N.G.; VUL, B.M.; KOPYLOVSKIY, B.D.; KROKHIN, O.N.; MARKIN, Ye.P.; POPOV, Yu.M.; KHVOSHCHEV, A.N.; SHOTOV, A.P.

Semiconductor quantum generator with a p-n junction in GaAs. Dokl. AN SSSR 150 no.2:275-278 My '63. (MIRA 16:5)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR. 2. Chleny-korrespondenty AN SSSR (for Basov, Vul).
(Masers) (Gallium arsenide crystals) (Junction transistors)

L 17111-65 EWG(j)/EWA(k)/FBD/EWT(l)/EWT(m)/EPF(c)/EEC(k)-2/EPF(n)-2/EPR/EEC(t)/T/EEC(b)-2/EWP(k)/EWP(b)/EWA(m)-2/EWA(h) Pf-4/Pi-4/Pl-4/Pn-4/Po-4/Pr-4/Ps-4/Pu-4/Peb IJP(c)/ASD(a)-5/AFWL/ SSD/AEDC(a)/AFETR/RAEM(a)/ESD(gs)/ESD(t) WG/JD

ACCESSION NR: AP5000557 S/0051/64/017/006/0953/0954

AUTHOR: Markin, Ye. P.; Nikitin, V. V.

TITLE: Xenon-helium laser at λ = 3.50 microns

SOURCE: Optika i spektroskopiya, v. 17, no. 6, 1964, 953-954

TOPIC TAGS: gas laser, xenon helium laser, laser output

ABSTRACT: As reported in earlier papers by W. R. Bennet (Appl. Optics Suppl. No. 1, on Opt. Masers, 24-61, 1962) and N. G. Basov and others (Radiotekhnika i elektronika 8, 2084, 1963), the strongest stimulated emission in a xenon-helium laser is noted for the $3d_4$—$2p_9$ xenon line at λ = 3.50 μ. According to R. A. Paananen and D. L. Bobroff (Appl. Phys. Letts. 2, 99, 1963), the gain for this line corresponds to 50 db/m. In order to derive the optimum conditions for maximum output, the authors of the present paper have investigated (in June 1963) the power output of a xenon-helium laser at λ = 3.50 and 3.36 μ as a function of the following factors: the diameter of the discharge tube, the pressure of the gas mixture, the pumping power, the length of the gas discharge, and others. Experiments were performed with a laser described in an earlier paper by the authors and N. G. Basov (Optika i Spektroskopiya, 15, 436, 1963). Plane, dielectric- and metal-coated mirrors, and three

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L 17111-65

ACCESSION NR: AP5000557

discharge tubes with diameters of 8, 12, and 20 mm were used. Although the maximum laser power was observed for tubes with pressures within the 1.7—2 mm Hg range, and in the case of $\lambda = 3.36\ \mu$ and an 8-mm tube operated at a pressure of 0.7 mm Hg, the operation of a laser which incorporates 8 and 12 mm tubes was stable within a wide range of pressures from 0.2 to 20 mm Hg and up. Stable operation is also reported for a 2—3 cm discharge at 1 watt pumping power. In the case of $\lambda = 3.50$ and 3.36 μ and a 12-mm tube, the maximum power was developed when the Xe-He mixture was under 2 mm Hg pressure and the pumping power was approximately 50 watts. The laser output increases linearly with the length of discharge (from approximately 300 mm). The partial pressures of Xe and He were in the ratio of 1:100, respectively. "The authors thank V. P. Shchedrin for his help." Orig. art. has: 3 figures.

ASSOCIATION: none

SUBMITTED: 02Mar64 ENCL: 00 SUB CODE: EC

NO REF SOV: 002 OTHER: 002 ATD PRESS: 3149

Card 2/2

L 23291-66 EEC(k)-2/EWA(h)/EWP(k)/EWT(1)/FBD/T IJP(c) WG

ACC NR: AT6009314 SOURCE CODE: UR/2504/65/031/000/0113/0138

55
49
B+1

AUTHORS: Basov, N. G.; Belenov, E. M.; Markin, Ye. P.; Nikitin, V. V.; Orayevskiy, A. N.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Investigation of a gas-mixture laser 25,44

SOURCE: AN SSSR. Fizicheskiy institut. Trudy, v. 31, 1965. Kvantovaya radiofizika (Quantum radio physics), 113-138

TOPIC TAGS: gas laser, laser r and d, laser beam, laser modulation

ABSTRACT: The purpose of this combined theoretical and experimental investigation was to assess the possibility of increasing the power of different gas lasers by choosing optimal operating conditions (pressure of mixture, partial pressures of the individual components, pump power, mirror transmission coefficient, diameter and length of discharges). The divergence of the beam and the spectrum of the generated radiation as functions of the outward power of the genera-

Card 1/2

tor are also investigated. Using a neon helium mixture and a special laser design, the authors obtained a power of 100 MW at 1.15 μ with an optimal tube radius of 8 mm and length 3 meters. The angular modulation characteristics were measured as a function of the output power. Reduction of the beam divergence by filtering out certain modes is discussed. Rotating-laser apparatus constructed for the measurement of the laser emission spectrum (a modification of the Sagnac experiment) is described. The results show that the output power of the laser can be increased by adding a buffer gas to intensify the decay of the metastable neon, by increasing the temperature of the working gas, by using pulsed excitation to populate the upper working level, by increasing the resonator length and the length of the discharge tube, and by decreasing the transverse dimensions of the discharge tube. The authors thank Yu. P. Trokhin, V. N. Lukanin, B. I. Prokopov, B. I. Belov, F. S. Titov, and A. F. Suchkov for a discussion of the results and help with the calculations. Orig. art. has: 16 figures and 13 formulas.

SUB CODE: 20/ ORIG REF: 022/ OTH REF: 020/ SUBM DATE: none

L 34937-65 EWG(j)/EWA(k)/FBD/EWT(l)/EWT(m)/EPF(c)/EEC(k)-2/EPF(n)-2/EPR/
EEC(t)/T/EWP(t)/EEC(b)-2/EWP(k)/EWP(b)/EWA(m)-2/EWA(h) Pn-4/Po-4/Pf-4/Pr-4/
Ps-4/Peb/Pi-4/Pu-4 IJP(c) WG/JD

ACCESSION NR: AP5006538 B/0056/65/048/002/0770/0771

AUTHOR: Letokhov, V. S.; Markin, Ye. P.

TITLE: On the statistics of radiation from a laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 2, 1965, 770-771

TOPIC TAGS: laser radiation, traveling wave laser, laser, stimulated emission, coherent light, ring laser

ABSTRACT: A procedure is described for the measurement of the amplitude probability density of the output of a laser to determine the deviation of the laser light from Gaussian light of thermal sources. The method consists in mixing two light signals with different frequencies and feeding the resultant beat frequency to an amplitude analyzer which measures the amplitude distribution. An experimental setup is shown in Fig. 1 of the Enclosure. A traveling-wave ring laser was used as a source of two light oscillations with different frequencies but with matched fluctuations of the amplitude (neon-helium mixture). The rate of rotation was chosen

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L 34937-65
ACCESSION NR: AP5006538

such as to make the frequency difference between two oscillations approximately 2 kc. A typical result is also shown in Fig. 1. The results can be fitted to a distribution that corresponds to heterodyning of light oscillations having Gaussian amplitude fluctuations. "The authors thank N. G. Basov for support and valuable critical remarks, and B. I. Belov, V. V. Gromov, and V. V. Nikitin for help in developing and adjusting the apparatus." Orig. art. has: 2 figures and 3 formulas. [02]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences, SSSR)

SUBMITTED: 07Dec64 ENCL: 01 SUB CODE: EC
NO REF SOV: 000 OTHER: 004 ATD PRESS: 3214

Card 2/3

L 34937-65
ACCESSION NR: AP5006538

ENCLOSURE: 01

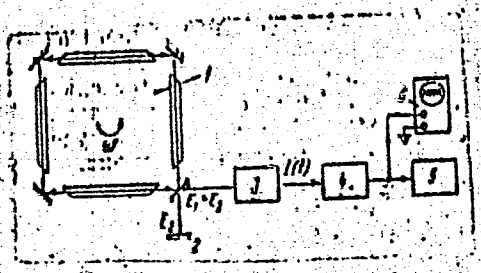

Fig. 1. Experimental setup

1 - Ring laser; 2 - mirror; 3 - photomixer;
4 - amplifier; 5 - pulse-height analyzer;
6 - oscilloscope.

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L 17985-66 FBD/EWT(1)/EEC(k)-2/T/EWP(k)/EWA(h) LJP(c) WG
ACC NR: AP6006804 SOURCE CODE: UR/0386/66/003/001/0054/0058

AUTHOR: Belenov, E. M.; Markin, Ye. P.; Morozov, V. N.; Orayevskiy, A. N.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Interaction between traveling waves in a ring laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 1, 1966, 54-58

TOPIC TAGS: gas laser, ring laser, helium neon laser, laser R and D, traveling wave interaction

ABSTRACT: An investigation of beat frequencies in traveling waves generated in a ring laser on a rotating platform may be used for highly accurate analysis of the spectral, statistical, and other characteristics of laser emission. However, frequency splitting Δ of the traveling waves takes place only at rates of rotation v greater than some critical velocity v_{cr} (or the corresponding quantity $\Delta_{cr}=2kV_{cr}/\pi$, where v is the linear velocity of a resonator mirror, k is the wave vector). Coupling between traveling waves causes mutual synchronization at frequencies below the critical value which results in single-frequency conditions. The authors studied

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L 17985-66

ACC NR: AP6006804

the quantity Δ_{cr} as a function of the parameters of a ring laser. A helium-neon laser was used in this experiment (λ=3.39 μ). A spectral analyzer was used for measuring the beat frequency Δ. The capture band Δ_{cr} was studied as a function of the coefficient of transmission for the output mirror. A reduction in transmission causes a sharp change in the capture band. Experiments were conducted on attenuation of the beam reflected from the external mirror by using a filter. Attenuation of this signal reduces the capture band. Various optical systems were used for passing the direct and reverse beams to the photoelectric mixer with a simultaneous reduction in the energy reflected into the resonator from the external mirrors. Figures are given showing two modifications of systems for reducing the capture band to 300 cps. The Q of the resonator was reduced for a further reduction of the band. This was done by replacing one of the opaque mirrors in the resonator with a semi-transparent mirror. The result was a reduction in the capture band from 300 to 50 cps at the same output power. The magnitude of the capture band is determined by the reverse reflection of energy from various elements in the resonator, scattering by nonhomogeneous media, and the nonlinear dependence of polarization on the field. "The authors are grateful to N. G. Basov for valuable consultation and interest in the work and to V. V. Gromov for assistance in carrying out the experiment!" Orig. art. has: 2 figures, 2 formulas. [14]

SUB CODE: 20/ SUBM DATE: 23Nov65/ ORIG REF: 002/ OTH REF: 003/ ATD PRESS: 4213

Card 2/2

S/190/62/004/006/023/026
B101/B110

15 9 20

AUTHORS: Voyutskiy, S. S., Markin, Yu. I.

TITLE: Adhesion of polymers to metals. I. Adhesion of various elastomers to aluminum and zinc

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962, 926-934

TEXT: The resistance P (g/cm) to separation of joints of the elastomer and flexible foils of Al (50 μ) or Zn (70 μ) was measured. Natural rubbers, polyisobutylene types П-85 (P-85), П-118 (P-118), П-155 (P-155), and П-200 (P-200) were investigated having the molecular weights 33,000, 126,000, 148,000, and 213,000, respectively; sodium butadiene polymers of the type СКБ-35 (SKB-35) and refined dielectric type СКБ-РД-35 (SKB-RD-35), butadiene styrene polymers types СКС-10 (SKS-10) and СКС-30 (SKS-30) with 10 and 30% styrene, respectively; oil filled copolymer type [illegible]-30 АМ (SKS-30AM); butadiene methyl styrene copolymer type СКМС-30 (SKMS-30) (30% methyl styrene), polychloroprene; butadiene acrylonitrile copolymers types СКН-18 (SKN-18), СКН-26 (SKN-26),

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S/190/62/004/006/023/026
B101/B110

Adhesion of polymers to ...

CKN-40 (SKN-40) with 18, 26, and 40% acrylonitrile, respectively; chlorosulfopolyethylene; and butadiene styrene copolymer type (SKS-30-1 (SKS-30-1) containing 30% styrene and 1.25% methacrylic acid. The elastomers were applied as 8-10% solution to the metal foils, and dried. Results: (1) With a thickness of the elastomer layer >140 μ, P becomes independent of the layer thickness; (2) with nonpolar elastomers, P depends on the separation rate, but not so with polar elastomers. (3) When studying the effect of temperature, the following P values were obtained:

Elastomer	Aluminum foil		Zinc foil	
	without heating	100°C	without heating	100°C
Natural rubber	30	80	0	0
P-85	140	160	110	163
SKB-35	320	320	210	210
SKB-RD-35	390	340	250	220
SKS-10	77	68	57	60
SKS-30	45	47	15	39
SKS-30-1	320	540	90	280

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S/190/62/004/006/023/026
B101/B110

Adhesion of polymers to ...

Elastomer	Aluminum foil without heating	100°C	Zinc foil without heating	100°C
SKS-30AM	15	30	10	60
SKMS-30	5	5	10	630
Polychloroprene	930	720	750	1210
SKN-18	950	1660	1350	30
SKN-26	40	920	10	20
SKN-40	100	115	20	125*
Chlorosulfopolyethylene	800	0*	275	

(* = thermal decomposition)

(4) With polyisobutylenes, P dropped with increasing molecular weight. These results are explained by the fact that with nonpolar elastomers the adhesion is caused only by dispersive forces, or by diffusion into surface defects or into the oxide layer of the metal foil, whereas with polar elastomers stronger forces such as dipole-dipole or ion-dipole interaction, hydrogen bonds, or chemical bonds are effective. There are 3 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

Card 3/4

S/190/62/004/006/023/026
B101/B110

Adhesion of polymers to ...

SUBMITTED: April 20, 1961

Card 4/4

MARKIN, Yu. I.; GORCHAKOVA, V. M.; GUL', V. Ye.; VOYUTSKIY, S. S.

Adhesion of high polymers to metals. Part 3: Thickness and structure of the oxide film on a metallic substratum as affecting adhesion. Izv. vys. ucheb. zav.; khim. i khim. tekh. 5 no.5:808-814 '62. (MIRA 16:1)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni Lomonosova, kompleksnaya laboratoriya po polimeram.

(Polymers) (Metallic oxides) (Adhesion)

L1403

S/032/62/028/010/004/009
B117/B186

AUTHORS: Voyutskiy, S. S., and Markin, Yu. I.

TITLE: Determination of the adhesion of a polymer to a metal

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 10, 1962, 1203 - 1205

TEXT: The method used for the present investigation is similar to that described by I. I. Kletchenkov in Zavodskaya laboratoriya, XXIV, 11, 1376 (1958) and consists in examining polymers bonded with flexible metal foil by separating the bonded material or the metal into layers. An improved adhesiometer of the TsNIKZ (A. I. Shapovalova, S. S. Voyutskiy, A. P. Pisarenko. Kolloidnyy zhurnal, 19, 274 (1957); V. L. Vakula, S. S. Voyutskiy, Kolloidnyy zhurnal, 23, 672 (1961); S. S. Voyutskiy, Autogeziya i adgeziya vysokopolimerov (Autohesion and adhesion of high-polymers), Rostekhizdat (1960)) was used for the purpose, which allows the separation into layers to be measured at a rate of 0.015 - 100 cm/sec and with a force up to 4.5 kg. The kind of destruction of the bonded material was ascertained from the luminescence that occurred while the separated foil was being irradiated with the ultraviolet light from a ПРК-2 (PRK-2)

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mercury lamp. Adhesion was influenced by the way of applying the polymer to the foil. The fact that the application of the elastomer from the solution was more convenient than applying a finished film is presumably due to the easier diffusion of the polymer into the oxide layer. Adhesion was affected neither by the thickness (> 120 - 140μ) and width of the polymer layer nor by the pressure acting on the bonded material. The rate of separation into layers did not affect the adhesion of polar polymers, but did affect that of apolar polymers. The present method, which requires no precise centering of the force applied, can be used to determine the adhesion of both elastic and hard polymers to metals. In the latter case, the polymer must lie between two metal foils. The reproducibility of results obtained in this manner is ±1%. There are 2 figures.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii im. M. V. Lomonosova (Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov)

L 17798-63 EPR/EWP(j)/EPF(c)/EWP(q)/EWT(m)/BDS AFFTC/ASD
Ps-4/Pc-4/Pr-4 RM/MAY/WW/HM/JD

ACCESSION NR: AP3006621 S/0076/63/037/009/2027/2033

AUTHOR: Voyutskiy, S. S.; Markin, Yu. I.; Gorchakova, V. M.; Gul', V. Ye.

TITLE: Adhesion of high polymers to metals. 4. Temperature dependence and activation energy of adhesion

SOURCE: Zh. fizicheskoy khimii, v. 37, no. 9, 1963, 2027-2033

TOPIC TAGS: adhesion, bonding, polymer to metal adhesion, polymer to metal bonding, adhesive strength, adhesive strength temperature dependence, activation energy of adhesion, apparent activation energy, bond, joint, adhesive, polyisobutylene P-85, sodium butadiene rubber SKB-35, butadiene-acrylonitrile copolymer, SKN-18, SKN-40, substrate, copper, copper foil, aluminum, aluminum foil, stripping test, adhesion testing machine, TsNIKZ, failure, failure type, electron microscope method, luminescence method, temperature effect, polar group effect, glass transition temperature, copper catalytic effect, intermolecular force

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L 17798-63

ACCESSION NR: AP3006621

8

ABSTRACT: The adhesion of polymers to metals has been studied by determining the dependence of the adhesive bond strength on temperature and by calculating the "apparent activation energy of adhesion" (E). P-85 polyisobutylene (molecular weight 93,000), SKB-35 sodium butadiene rubber, or SKN-18 or SKN-40 butadiene-acrylonitrile copolymers were used as adhesives, and Cu or Al foil, as substrates. The adhesive bonds were subjected to stripping tests at -100—+60C on a modified TsNIKZ adhesion testing machine (S. S. Voyutskiy, Yu. I. Markin, Zavodsk. laboratoriya, No. 10, 1203, 1962). The type of failure was determined by electron microscopic and luminescence methods also described in the study cited. The dependence of adhesive bond strength on temperature is given in the form of plots in Figs. 1 and 2 of the Enclosure. On the basis of these plots, the following conclusions are reached: 1) The magnitude and temperature dependence of polymer-to-metal adhesive strength is determined mainly by the nature of the polymer rather than by that of the metal. 2) At room temperature the adhesive strengths of the various polymers to metals are close in value; at lower and higher temperatures they vary considerably.

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L 17798-63
ACCESSION NR: AP3006621

Stripping tests should therefore be conducted in a wide temperature range. 3) An increase in the number of polar groups in the polymer molecule (copolymers SKN-18 and SKN-70) lowers the adhesive strength, owing to a drop in molecule flexibility. 4) Adhesion is lowest in the neighborhood of the glass transition temperature for all bonds except that of polyisobutylene (the causes of this exception require further study). The values of E calculated from $P = P_0 \exp(E/RT)$, where P is the adhesive strength and P_0 is a constant, are given in Table 1 of the Enclosure. The fact that the values of E are higher for Cu than for Al can be ascribed to the catalytic effect of Cu on the polymer and to the formation in the polymer of polar oxygen-containing groups. The magnitudes of E indicate that in the adhesive bonds considered adhesion is due to intermolecular forces rather than to covalent chemical bonds. Orig. art. has: 4 figures and 2 tables.

ASSOCIATION: Moskovskiy institut tonkoy khimicheskoy tekhnologii (Moscow Institute of Fine Chemical Technology)

Card 3/7

MARKINA, A.B.

Age craniology of the fox (Vulpes vulpes L.). Trudy Biol. inst. otd. AN SSSR no.8:171-179 '62. (MIRA 15:12)
(Novosibirsk Province—Foxes) (Teeth) (Age)

YUDIN, B. S.; MARKINA,

New hosts of warble [illegible] of Georgia. [illegible]

1. Biologicheskiy [illegible]

VARFOLOMEYEV, D.F.; BUGAY, Ye.A.; DUDIN, V.N.; ZAGRYATSKAYA, L.M.; ANTIPIN, M.K.; MARKINA, A.I.; POLINSKAYA, M.R.;

Recovering spent caustic using flue gases. Trudy Bash. NIINP no.5: 319-322 '62. (MIRA 17:10)

1. Ordena Lenina Ufimskiy neftepererabatyvayushchiy zavod.

MARKINA, A.K.

Calculation of masses and density of meteor particles. Biul. Kom. po komet. i meteor. ANSSSR no. 11:47-50 '65.
(MIRA 18:12)

1. Odesskaya astronomicheskaya observatoriya.

E-2

USSR/Virology - Human and Animal Viruses.

Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 402.

Author : V.V. Ritova, A.F. Stefanskaya, A.V. Orlova, and A.P. Markina.

Inst :

Title : Influenza Virus Type C in Children

Orig Pub : Vopr. virusologii, 1956, No -, 35-38

Abst : An investigation of an outbreak of influenza type C in a children's home was conducted in February-March 1955. Vaccination of the Children with mixed vaccine A, A^1, and B carried out four months before the outbreak, proved to be ineffective. The outbreak of influenza type C clinically does not differ from outbreaks of type A, A^1, and B. A test of sera of convelescents from virus type C which were received at the end of the outbreak from abroad revealed the presence of antibodies to virus C. In sera of children from another children's home

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Abs Jour : Ref Zhur - Biologiya, No 1, 1957, 402

which was under observation, no antibodies to virus C were found. A check of double sera from eleven children who became ill after the outbreak by means of "RTGA" with the virus of type C revealed an increase in the titer of virus-neutralizing antibodies to this virus. The authors did not succeed in isolating the type Cvirus.

SULEYMANOVA, Z.I.; MARKINA, A.V.

Some changes in the structure of rayon fibers taking place under various conditions of the impregnation and drying of cord threads. Kauch. i rez. 24 no.9:27-29 '65. (MIRA 18:10)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

TSYGANKOV, Petr Semenovich; MARKINA, Anna Timofeyevna [Markina, H.T.]; KASPERS'KA, O., red.; VELICHKO, M. [Velychko, M.], tekhn.red.

[Production of synthetic alcohol] Vyrobnytstvo syntetychnoho spyrtu. Kyiv, Derzh.vyd-vo tekhn.lit-ry URSR, 1958. 86 p. (MIRA 13:2)

(Alcohol)

1c

L 37019-65 EWT(m)/EPF(c)/EPR/EWP(j) Pc-4/Pr-4/Pa-4 WW/RM

ACCESSION NR: AR5003012 S/0081/64/000/020/S082/S082

31
B

SOURCE: Ref. zh. Khimiya, Abs. 20S511

AUTHOR: Mikhant'yev, B. I.; Kretinin, S. A.; Gostev, M. M.; Shatalov, V. P.; Markina, E. I.; Senyuk, Ye. P.

15

TITLE: [illegible] rubbers filled with carbon black and oil and produced by [illegible]

CITED SOURCE: Tr. Labor. khimii vysokomolekul. soyedineniy. Voronezhsk. un-t, vyp. 2, 1963, 103-108

TOPIC TAGS: synthetic rubber, butadiene rubber, styrene rubber, carbon black filler, gas black filler, channel black filler, oil filled rubber, high temperature polymerization, rubber mechanical property, rubber emulsifier, synthetic fatty acid, colophony, latex coagulation

TRANSLATION: The authors studied the properties of butadiene-styrene rubbers of the SKS-30 type, produced by high-temperature polymerization with the addition of 17.6-50.0 parts by weight PN-6 oil and 50.0 parts by weight gas black, channel black or HAF black to latex stage. The following combinations were tested as

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L 37019-65

ACCESSION NR: AR5003012

0

emulsifying agents: Nekal and the Na soaps of synthetic fatty acids; Nekal and the K soaps of synthetic fatty acids; the K soap of hydrogenated colophony and the K soaps of synthetic fatty acids. The 20% carbon black dispersions were prepared by grinding in a ball mill for 24 hrs. in the presence of 4-6 parts by weight leukanol and 0.6 parts by weight NaOH (in relation to the carbon black). The oil emulsion was of commercial origin. During the coagulation of mixtures from Nekal latex, the best results were produced by $CaCl_2$ and CH_3COOH; in the case of latex produced with the soaps of synthetic fatty acids, the best results were produced by a mixture of $CaCl_2$, NaCl and CH_3COOH; in the case of colophony latex, NaCl and H_2SO_4 gave the best results. During deformation of the initial rubber with 4500 g, raw mixtures of rubber filled with carbon black and oil (SMK rubber) had a somewhat greater plasticity and less reducibility than when carbon black was added to oil-filled rubber on the rollers. The strength of the SMK vulcanates was somewhat lower, however. The method of introducing the carbon black had no significant effect on the properties of rubber mixtures and vulcanates in soft rubber. The properties of rubber do depend, however, on the method of coagulation. The instantaneous (single-stage) coagulation of SMK rubber resulted in somewhat more rigid mixtures with increased strength and decreased relative elongation. A. Shvarts.

ENCL: 00

SUB CODE: MT

Card 2/2

USSR/Chemistry - Coriandrol Dec 48
Chemistry - Synthesis

"Asymmetrical Synthesis of Coriandrol Derivatives," G. V. Pigulevskiy, G. V. Markina, 4 pp

"Dok Ak Nauk SSSR" Vol LXIII, No 6

Undertook synthesis of coriandrol monoxide according to Naves and Bachmann's instructions with the aid of a monohydrogen peroxide of phthalic acid. Table shows characteristics of new substance (d-coriandrol oxide) and its relation to l-coriandrol oxide as measured by N. Prilezhayev and Naves and Bachmann. Gives Raman spectra for the two oxides.

35/49T18

USSR/Chemistry - Coriandrol (Contd) Dec 48

and three possible formulas describing structure of the unsaturated monoxide. Submitted by Acad A. Ye. Poray-Koshits, 25 Oct 48.

35/49T18

Markina, G.V.

3002

M.A. YOUTZ 2 copies

2

Molecular chromatography. I. Separation of mixtures of nitrophenols. K. A. Oziobiin and G. V. Markina. *J. Gen. Chem. U.S.S.R.* 24, 1933-7(1954)(Engl. translation). See *C.A.* 49, 13932d. R. M. R.

PM

MARKINA, G.V.

OGLOBLIN, K.A.; MARKINA, G.V.

Investigation in the field of molecular chromatography. Part 1. Separation of nitrophenol mixtures. Zhur.ob.khim. 24 no.11:1965-1970 N '54. (MIRA 8:3)

1. Nauchno-issledovatel'skiy khimicheskiy institut Leningradskogo gosudarstvennogo universiteta.
(Phenol) (Chromatographic analysis)

MARKINA, G. V.

5

Molecular chromatography. II. Separation of mixtures of nitrophenylnitramines. K. A. Oglobiin and G. V. Markina (Leningrad State Univ.). *Zhur. Obshchei Khim.* 25, 950-97(1955); cf. *C.A.* 49, 13932d.—Improved prepn. and isolation of several nitrophenylnitramines is described. Treatment of 15 g. o-$O_2NC_6H_4NH_2$ in 150 ml. AcOH with 18 ml. HNO_3 (d. 1.51, freed of N oxides) and 19 ml. Ac_2O and quenching in ice gave a ppt. and a filtrate (I); the washed ppt. was taken up in 3% Na_2CO_3 and pptd. with 2*N* HCl yielding 23.3% *o-nitrophenylnitramine* (II), m. 84.5–85.5°. I was extd. with C_6H_6, the ext. was washed with H_2O and extd. with 3% Na_2CO_3 and the latter ext. was acidified yielding 5.8 g. more II, while the filtrate from the 1st crop of II similarly gave 3.92 g. II; thus the total crude yield was 72.2%. The product (1 g.) was passed in C_6H_6 over moist Al_2O_3 giving a yellow-green zone, which extd. with C_6H_6-dil. HCl gave 0.88 g. pure II, m. 86.5–7.5°. Similarly p-$O_2NC_6H_4NH_2$ gave 51.8% *p-nitrophenylnitramine*, m. 110–12°, which was chromatographed as above, the washing being done with C_6H_6-Bu_2O, yielding on elution of the yellow-green zone a 75% recovery of pure product, m. 112.5–13°. 2,3-Dinitroaniline similarly gave 73.8% *2,3-dinitrophenylnitramine*, m. 63.5°, which is unstable after several days of storage; chromatography as described above gave 70% recovery of pure product, decomp. 67° (violent); during all operations this material should be shaded from direct light. When 8 g. p-$O_2NC_6H_4NH_2$ was added over 35–40 min. to 80 ml. HNO_3 (d. 1.51 free of N oxides) at −13° and the mixt. quenched in ice, there was formed, after the isolation described above, 65.2% *2,4-dinitrophenylnitramine*, m. 99–102.5°; this chromatographed as above gave 90% recovery of pure product, yellow-brown, m. 103.3–4°. Nitration of 3,4-dinitroaniline in AcOH with HNO_3 (d. 1.51, free of N oxides) in the presence of Ac_2O which is added after HNO_3 at substantially room temp. gave 47% yellow-red *3,4-dinitrophenylnitramine*, which after chromatography in Et_2O gave pure product, yellow, decomp. 94° (violent). Chromatographic sepn. by washing down with C_6H_6-Et_2O of adsorbed mixts. on Al_2O_3 (moist) resulted in satisfactory resolution of mixts. such as: o- and p-nitrophenylnitramines, o-nitrophenylnitramine and 2,4-dinitrophenylnitramine, p-nitrophenylnitramine and 2,4-dinitrophenylnitramine, as well as o-, p-nitrophenylnitramines and 2,4-dinitrophenylnitramine, 2,4- and 3,4-dinitrophenylnitramines, 2,3-, 2,4- and 3,4-dinitrophenylnitramines (the order of adsorption increases as 3,4-, 2,4-, 2,3-, resp.), and, finally o- and p-nitrophenylnitramines mixed with 2,3-, 2,4- and 3,4-dinitrophenylnitramines; in the last case the 2,3- and 2,4-derivs. were not sepd. individually, but the other 3 components were obtained in a pure state. The order of adsorption (increasing) is: p-, o-nitro, 3,4-dinitro, mixed 2,4- and 2,3-dinitro derivs.

G. M. Kosolapoff

MARKINA, G.V.

Molecular chromatography. III. Separation of mixtures of nitrophenols and nitrophenylnitroamines. K. A. Oglobdin and G. V. Markina. *J. Gen. Chem. U.S.S.R.* 25, [illegible] (1955). —See *C.A.* 50, 1121.
B. M. R.

(1)

14 Apr 56

OGLOBLIN, K.A.; MARKINA, G.V.

Research in molecular chromatography. Part 3. Separation of mixtures of nitrophenols and nitrophenylnitramines. Zhur. ob.khim. 25 no.8:1616-1619 Ag '55. (MLRA 9:2)

1.Nauchno-issledovatel'skiy khimicheskiy institut Leningradskogo gosudarstvennogo universiteta.
(Chromatographic analysis) (Phenol) (Amines)

MARKINA, G. V.

Molecular chromatography. IV. Separation of mixed nitroanilines. K. A. Oglobin and G. V. Markina (*Zh. obshch. Khim.*, 1956, 26, 95—101).—Seven synthetic mixtures of isomeric mono- and di-nitroanilines and 2 : 4 : 6-trinitroaniline, also mixtures of *p*- and 3 : 4-di-nitroaniline and *o*-nitrophenols were separated from benzene

on Al_2O_3 and their adsorption curves studied. The order of adsorption capacity was as follows: 2 : 6 di- <2 : 4 : 6 tri- <*o*- <2 : 5 di- <*m*- <*p*- = 3 : 5-di- <2 : 3-di- <2 : 4-di- <3 : 4-dinitroaniline <*o*- <*m*- <*p*- <2 : 4-di-nitrophenol <*p*- <*o*-nitrophenolnitramine <2 : 4-dinitrophenolnitramine. Adsorption capacity by these methods depends on molecular polarity, i.e., in majority of cases, increase is related to general increase of molecular dipole moments.

A. L. B.

AUTHORS: Gelbshtein, K. A., Markina, Z. V.

TITLE: Chromatographic separation of mixtures of [illegible] benzoic Acids (Khromatograficheskoye razdeleniye [illegible] i dinitrobenzoic [illegible])

PERIODICAL: Vestnik Leningradskogo Universiteta. Seriya fizika [illegible], 1959, No. [illegible], pp. [illegible] (USSR)

ABSTRACT: The chromatographic analysis used here is connected with [illegible] investigations concerning the chromatographic separation of mixtures of other nitroderivatives of the [illegible] (Refs. 1-4). An aqueous oxide of aluminum with a water [illegible] % was used for the separation of the mixtures mentioned in the title, and solvents were benzene and mixtures of benzene with ether and acetone. Experiments with [illegible] yield satisfactory results. The investigated mixtures were [illegible] o-(I), m-(II), and p-(III) nitrobenzoic acids and 3,5-(V) dinitrobenzoic acids. The separation was [illegible] carried out in the double mixtures (I)+(III), (II)+(III), (II)+(IV), (III)+(IV), (IV)+(V). From the mixtures I+II and (II)+(V) only (II) was obtained in pure form. It is less adsorbable than (I) and (V). The adsorbability of the [illegible]

Card 1/2

SOV [illegible]

Chromatographic Separation of Mixtures of Nitro- and Dinitrobenzoic Acids

acids is based upon their arrangement in the column in the following order: o- > m-, o- > p-, m > p-, m > 2,4-, 3,5- > m-, p- > 2,4-, 3,5- > 2,4-. This arrangement corresponds to the dependence of the absorbability on the intensity of the acid, which was detected already earlier. The dissociation constants of the various acids are given in a table. The other three mixtures investigated were anomalous compared with the dependence detected here. The individual separation processes are described in detail in the experimental part. There are 1 table and 13 references, 7 of which are Soviet.

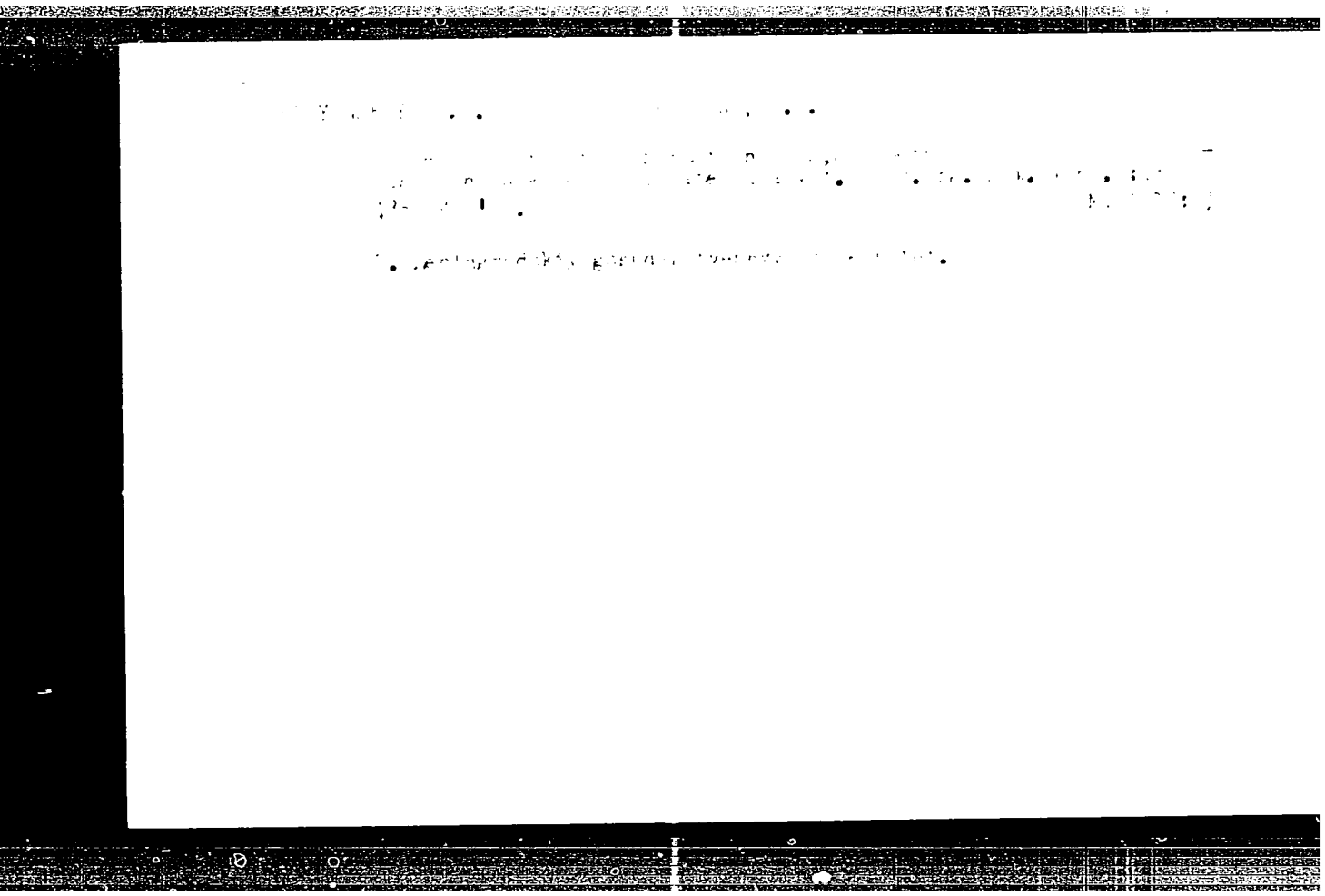
SUBMITTED: May 30, 1958

Card 2/2

DOBRYANSKIY, A.F.; MARKINA, G.V.

Thermocatalyzed transformation of pentaerythritol on an alumino-silicate catalyst. Zhur.ob.khim. 32 no.4:1307-1310 Ap '62. (MIRA 15:4)

1. Leningradskiy gosudarstvennyy universitet.
(Pentaerythritol) (Aluminosilicates)



PLYUSHCHEV, V.Ye.; MARKINA, I.B.; SHKLOVER, L.P.

Diagrams of phase conversions in binary systems formed by rubidium and cesium nitrates with strontium and barium nitrates. Zhur.neorg.khim. 1 no.7:1613-1618 Jl '56. (MLRA 9:11)

1. Moskovskiy institut tonkoy khimicheskoy tekhnologii imeni M.V. Lomonosova.
(Thermal analysis) (Nitrates)

MARKINA, I. B.

Polymorphism of rubidium and cesium nitrates and their interaction with barium nitrate. V. B. Plyushchev, I. B. Markina, and L. P. Sukhova (M. V. Lomonosov Moscow Fine Technol. Inst.). *Doklady Akad. Nauk S.S.S.R.* 108, 645-7(1956).—The points of polymorphous transformation of $CsNO_3$ and $RbNO_3$, and the m.p. of the 2-component systems formed by them with $Ba(NO_3)_2$ were detd. thermoanalytically. The $\delta \rightarrow \gamma$ $RbNO_3$ transformation point was 164°; $\delta \rightarrow \beta$ 261°; m.p. 314°. For $CsNO_3$, the $\beta \rightarrow \alpha$ transformation point was at 154°, m.p. 414°. In the $RbNO_3$-$Ba(NO_3)_2$ system, the eutectic m.p. was at 235°, with 71 mol. % $RbNO_3$, and in the $CsNO_3$-$Ba(NO_3)_2$ system at 310°, with 87 mol.% $CsNO_3$.

W. M. Sternberg

VOLCHEGURSKIY, L.F.; MARKINA, I.G.

Gas potential of the Pliocene sediments of the mid-channel region of the Ural River in the Caspian Lowland. Neftegaz. geol. i geofiz. no.7:17-21 '64. (MIRA 17:8)

1. Vsesoyuznyy aerogeologicheskiy trest Ministerstva geologii i okhrany nedr SSSR.

ACCESSION NR: AP4041067 S/0170/64/000/006/0003/0007

AUTHOR: Filippov, L. P.; Tugareva, N. A.; Markina, L. I.

TITLE: Measurement of small high-temperature pulsations and their utilization for determining the heat capacity of metals

SOURCE: Inzhenerno-fizicheskiy zhurnal, no. 6, 1964, 3-7

TOPIC TAGS: high temperature pulsation, temperature pulsation measurement, photoelectric measurement method, thermionic measurement method, metal heat capacity, heat capacity measurement

ABSTRACT: A photoelectric method of temperature determination is described, and the diagram of a circuit with a photomultiplier for measuring small pulsations of the temperature of an incandescent filament is shown. Formulas for calculating heat capacity are also given. In the experiments, tungsten wire 0.1 mm in diameter was heated with alternating current at 50 cps. The mean temperature of the wire was determined by measuring its resistance with a d-c potentiometer. The temperature pulsations, measured by means of a circuit with a photomultiplier, were reproducible to within 0.5%. Similar results were ob-

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ACCESSION NR: AP4041067

tained by the use of a circuit with a photocell. The maximum error in measuring high-temperature pulsation by the photoelectric method was about 7%. Temperature pulsations on the same object measured by the thermionic-emission and photoelectric methods had a maximum difference of 1.6%, and a mean difference of 0.5%. Although both measurement methods produce almost identical results, the photoelectric method has several advantages; for example, deep vacuum is not required, and the method is suitable for materials with a low thermionic emission and for large objects. In the present study, the data obtained by the photoelectric method were readily applicable in determining the heat capacity of tungsten wire in the 1000—2000C range. Orig. art. has: 1 figure and 8 formulas.

ASSOCIATION: Gosudarstvenny*y universitet im. M. V. Lomonosova, Moscow (Moscow State University)

SUBMITTED: 26Jun63 ATD PRESS: 3064 ENCL: 00

SUB CODE: EM, MM NO REF SOV: 001 OTHER: 005

Card 2/2

[redacted], G.V., kand. khimich. nauk; MALKINA, I.V., inzh.; [redacted]; [redacted], M.I., kand. ekonom. nauk; [redacted], M., inzh.

Investigating the quality of an enamel pipe coating. Izv. vys. ucheb. zav.; neft' i gaz no.11:113-118 '58. (MIRA 12:1)

MARKINA, M. I., Can Chem Sci -- "Study of specific catalytic activity of oxide catalyzers ~~in relation~~ to the interaction ~~of~~ carbon monoxide ~~with~~ water vapor." Mos, 1961. (State Com of the ~~Soviet~~ Council of Ministers USSR on Chem. Order of Labor Red Banner Sci-Res Phys-Chem Inst im L. Ya. Karpov) (KL, 8-61, 231)

MARKINA, M.I.; BORESKOV, G.K.; IVANOVSKIY, F.P.; LYUDKOVSKAYA, B.G.

Catalytic activity of iron-chromium catalysts in the interaction of carbon monoxide with water vapor. Kin.i kat. 2 no.6:867-871 N-D '61. (MIRA 14:12)

1. Gosudarstvennyy nauchno-issledovatel'skiy institut azotnoy promyshlennosti.

(Carbon monoxide)
(Water vapor) (Catalysis)

ACC NR: [illegible] (A) SOURCE CODE: UR/0064/66/000/004/0037/0040

AUTHOR: Semenova, T. A.; Markina, M. I.; Shteynberg, B. I.; Kozlov, L. I.; Mayorov, I. K.

ORG: none

TITLE: Low-temperature catalyst for the carbon monoxide conversion process

SOURCE: Khimicheskaya promyshlennost', no. 4, 1966, 37-40

TOPIC TAGS: carbon monoxide, industrial catalyst, HYDROGEN, WATER VAPOR

ABSTRACT: The paper discusses the properties of a low-temperature catalyst, developed at GIAP, for the conversion of carbon monoxide and water vapor into hydrogen. The main components of the catalyst are compounds of zinc, chromium, and copper. The presence of sulfur compounds in the gas rapidly reduces the catalyst's activity. Long-term tests showed the operation of the catalyst to be stable over a period of one year. A gradual decrease in activity is due not only to poisoning with sulfur compounds, but also, as indicated by x-ray diffraction analysis, to a gradual recrystallization of the catalyst. The catalyst was then tested in a pilot plant unit with a capacity of 1000 m^3 of gas per hour. The results permit the authors to recommend the industrial use of the low-temperature catalyst studied. Orig. art. has: 7 tables.

SUB CODE: 07/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 007

Card 1/1 UDC: 661.961.5:66.097.3-974

MARKINA, M.I.; PETROVA, N.V.; POPKOVA, L.N.; TIMOFEYEV, V.D.; KHUDYKH, M.I.

Investigating the wear of breaker rollers and the lengthening of their service life. Izv.vys.ucheb.zav.; tekh.tekst.prom. no.5:34-37 '64. (MIRA 18:1)

1. Kostromskoy tekhnologicheskiy institut.

KRYUKOV, A.V.; MARKINA, N.M.

Nature of magnetic anomalies over "diatremes." Mat. po geol. i pol. iskop. Kras.kraia no.4:253-259 '62. (MIRA 17:2)

ACC NR: AP7001364 (A) SOURCE CODE: UR/0413/66/0 [illegible]/0031/0031

INVENTORS: Ivanovskiy, F. P.; Shteynberg, B. I.; Semenova, T. A.; [illegible], M. I.; Kozlov, L. I. Shutov, Yu. M.

ORG: none

TITLE: A catalyst for gas purification. Class 12, No. 187736 [announced by State Scientific Research and Design Institute of the Nitrogen Industry and of Organic Synthesis Products (Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy institut azotnoy promyshlennosti i produktov organicheskogo sintesa)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. [illegible], 1966, 31

TOPIC TAGS: catalysis, industrial catalyst, gas, zinc oxide, chromium oxide, copper oxide, magnesium oxide, manganese oxide, aluminum oxide, titanium oxide, acetylene, oxygen, nitrogen oxide

ABSTRACT: This Author Certificate presents a catalyst for gas purification. The catalyst contains hydrogen and consists of oxides of zinc, chromium, and copper with admixtures of oxides of magnesium, manganese, aluminum, and titanium. To increase its stability and its activity in freeing gases from acetylene, oxygen, and nitrogen oxides, the oxides of zinc, chromium, and copper are taken in the proportions ZnO : Cr_2O_3 : CuO = 1.0 to 0.05 : 10.0 to 0.03 : 10.0. Each admixture of the oxides

Card 1/2 UDC: 66.097.3:66.074.3

ACC NR: AP7001364

of magnesium, manganese, aluminum, and titanium may constitute 0.05--15.0% of the basic catalyst composition. Prior to its use, the catalyst may be treated with a hydrogen-containing gas at a temperature of 225--275C.

SUB CODE: 07/ SUBM DATE: 14Apr64

Card 2/2

ACC NR: AT7000565 SOURCE CODE: UR/2789/66/000/0[illegible]/0022

AUTHORS: German, A. I.; Korobov, M. G.; Markina, N. G.; Pakhomova L. A.

ORG: none

TITLE: The angular distribution of reflected radiation from flight data of an IL-18 aircraft in 1964

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 70, 1[illegible]. Radiatsionno-opticheskiye i ozonometricheskiye issledovaniya atmosfery (Radiation-optical and ozonometric investigations of the atmosphere), 3-22

TOPIC TAGS: aircraft, actinometry, aerial camera, solar radiation, radiation measurement, meteorologic satellite, cloud formation, potentiometer / AFA-37 aerial camera

ABSTRACT: This paper poses the problem of joint examination of cloud and radiation fields. A method for aircraft experiments and for processing the results of measurements of reflected short-wave radiation from various underlying surfaces and cloud formations is described. The aircraft had: actinometric apparatus for measuring the angular distribution of the intensity and flux density of reflected radiation (0.3—3.0 μ); a Yanishevskiy pyranometer for measuring the total radiation flux; and an AFA-37 aerial camera for vertical photography of the terrain and cloud formations. The incident total radiation was recorded continuously on the paper tape of a

Card 1/3

UDC: 551.521.14

ACC NR: AT7000565

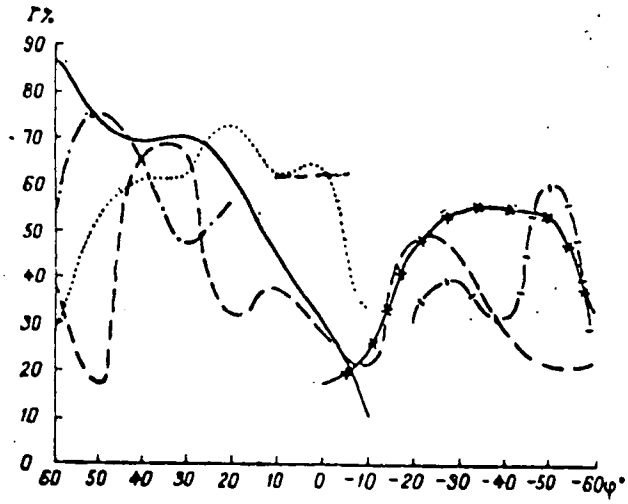

Fig. 1. Angular distribution of luminance coefficient above cumulus congestus

potentiometer. Flights were made in areas of Central Asia, the Caspian Sea, the European Territory of the SSSR, and the Far East. The ascending short-wave radiation was found to be chiefly determined by the reflecting properties of the underlying

Card 2/3

ACC NR: AT7000565

surface and the clouds. The angular dependence of the luminance coeffic[illegible] of the earth's surface and clouds within sighting angles of 0±60° is entirely determined by the horizontal heterogeneity of the reflecting properties of the earth's surface and the upper cloud limit (see Fig. 1). The contribution of the atmospheric layer above a water surface from the reference level to 9 km to the ascending radiation does not exceed 3% of the incident radiation for sighting angles of 0±30°. Orig. art. has: 1 formula, 17 graphs, 3 photographs, and 4 tables.

SUB CODE: 04,20/SUBM DATE: 20Jan65/ ORIG REF: 004/ OTH REF: 005

Card 3/3

BEK, V.I.; KARCASHOV, D.A.; VLASOVA-GOLOVATAYA V.I.; Prinimali uchastiye: MARKINA, O.A.; ZNAMENSKAYA, M. [illegible]VIZHENSKAYA, L.A.

Heat-resistant VK-4 elastic adhesive. Plast.massy no.4:23-25 '64. (MIRA 17:4)

BROVENKO, V.Ya.; KALININA, O.F.; MARKINA, G.T.; PETROV, G.M.

Right ascensions of the sun, the moon, lunar crater Moesting A and major planets from the observations at the Nikolaev Observatory in 1960. Izv.GAO 23 no.1:65-73 '62. (MIRA 16:12)

BROVENKO, V.Ya.; KALININA, O.F.; MAKINA, O.T.; PETROV, [illegible]; [illegible]

[illegible] ascensions of bodies of the solar system determined from observations with the Freiberg-Kordrattey transit [illegible] in 1961. Izv. GAO 23 no.4:82-90 [illegible]. (MIRA 17:5)

MARKIN, O.T.

Results [illegible]
the sur[illegible]

MARKINA, R.S. (Ordzhonikidze)

Clinical aspects and prognosis of prolonged reactive states. (MIRA 15:2)
Probl.sud.psikh. 9:252-257 '61.
(MENTAL ILLNESS)

MAKITA, T. [illegible].

"Hydrated Phosphates of Aluminum, Iron, and Chromium." Cand Chem Sci, Rostov-na-Donu State U; Chair of Chemistry, Crimean Pedagogical Inst imeni M. V. Frunze, Simferopol', [illegible], Feb 55)

SO: Sum. No. 731, 26 Aug 55-Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14).

AUTHORS: Danil'chenko, P. T., Gyunner, E. A., Markina, T. D. 78-3-6-18/30

TITLE: Refractometric Investigations of the Reactions in Solutions (Refraktometricheskoye issledovaniye reaktsiy v rastvorakh)

PERIODICAL: Zhurnal Neorganicheskoy Khimii, 1958, Vol. 3, Nr 6, pp. 1398-1402 (USSR)

ABSTRACT: Reactions in acqueous solutions may occur as exchange-or reduction-oxidations, or accompanied by the formation of complexes. The changes of the refractive index may also take place with these reactions. The analyses taking account of the change of the refractive index, are described as refractometric methods.
Refractometric investigations comprise three types of reactions:
a) reciprocal exchange, without change of the number of ions in the solution;
b) reciprocal exchange, accompanied by a reduction of the number of ions in the solution;

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c) reciprocal exchange, accompanied by a change of the ionic charge without change of the number of ions in the solution.

Typical examples were given and the corresponding refractograms of these reactions were recorded.
The complex formation in the solution may be determined by refractometric methods. It was shown that conclusions with respect to the quantitative character of the reactions can also be drawn by the refractometric investigations with each reaction of interaction, accompanied by a decrease of the ionic number or according to the change of the ionic charge.
There are 2 figures, 2 tables, and 4 references, 3 of which are Soviet.

SUBMITTED: April 8, 1957

AVAILABLE: Library of Congress

Card 2/2 1. Solutions--Chemical reactions 2. Refractometers--Application 3. Exchange reactions--Analysis 4. Oxidation-reduction reactions --Analysis

LOZOVOY, A.V.; MUSELEVICH, D.L.; RAVIKOVICH, T.M.; SENYAVIN, S.A.; TITOVA, T.A.; CHERKASOVA, V.F.; Prinimali uchastiye: DEMBOVSKAYA, Ye.A.; ZAKHARENKO, V.A.; L'VOVA, L.N.; MARKINA, T.I.

Hydrogenation catalysts on an aliminosilicate base. Zhur.prikl.khim. 34 no.10:2295-2302 O '61. (MIRA 14:11)
(Hydrogenation) (Catalysts)

LOZOVOY, A. V.; MARKINA, T. I.; SENYAVIN, S. A.

Coke formation on an alumina-molybdenum oxide catalyst in the course of high temperature hydrogenation. Trudy IGI 18:235-245 '62. (MIRA 15:10)

(Petroleum products) (Hydrogenation) (Catalysts)

MARKINA, Valentina Alekseyevna

[Baronial estates of the Dnieper Right-Bank Ukraine during the second half of the 18th century; its social and economic development] Magnatskoe pomest'e Pravoberezhnoi Ukrainy vtoroi poloviny XVIII v.; sotsial'no-ekonomicheskoe razvitie. Kiev, Izd-vo Kievskogo univ., 1961. 232 p. (MIRA 16:4)
(Ukraine--Economic conditions)

MAKHNA, V. A.

Dissertation defended for the degree of Doctor of Historical Sciences in the Institute of History

"Baronial Estates of the Right-Bank Ukraine in the Second Half of the XVIII Century (Social-Economic Development)."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

GLUZDOVSKIY, S.M.; SOKHRANSKIY, S.T.; GORNOVA, I.S.; MARKINA, V.A.; KAPLAN, A.A.; NAYFEL'D, A.M.; SOKOLOVA, M.P., red.; ZOLOTAREVA, M.A., red.; LARIONOV, G.Ye., tekhn. red.

[Technical documentation on cable jointing sleeves] Tekhnicheskaia dokumentatsiia na kabel'nye mufty. Moskva, Gosenergoizdat. No.14. [Jointing sleeves and termination of three-wire 1 kv. cables with aluminum sheathing used as common ne tral wire (fourth strand)] Mufty i zadelki na trekhzhil'nykh kabeliakh s aliuminievoi obolochkoi na napriazhenie 1 kv pri ispol'zovanii obolochki v kachestve nulevogo rabochego provoda (chetvertoi zhily). 1963. 55 p. (MIRA 16:9)

1. Nauchno-issledovatel'skiy institut kabel'noy promyshlennosti (for Markina). 2. Moskovskoye proyektno-eksperimental'noye otdeleniye Gosudarstvennogo proyektnogo instituta tyazheloy elektricheskoy promyshlennosti (for Nayfel'd).
(Electric cables)

PANASYUCHENKO, M.G.; MARKINA, V.I.

Mixed tumor of the pharnyx. Vest.oto-rin. 16 no.1:78-79 Ja-F '54. (MLRA 7:3)

1. Iz otdeleniya bolezney ukha, gorla i nosa Tyumenskoy oblastnoy bol'nitsy.
(Pharynx--Tumors)

PANASYUCHENKO, M.G.; MARKINA, V.I.

Method of diagnosing pathological processes in the maxillary sinuses. Vest.oto-rin. 16 no.2:60-62 Mr-Ap '54. (MLRA 7:6)

1. Iz otdeleniya bolezney ukha, gorla i nosa Tiumenskoy oblastnoi bol'nitsy.

(MAXILLARY SINUS, diseases,
*diag., x-ray)

PANASYUCHENKO, M.G.; MARKINA, V.I.

A case of cancer of the trachea [with summary in English]. Vop.onk. 3 no.5:636-638 '57. (MIRA 11:2)

1. Iz LOR-otdeleniya Tyumenskoy oblastnoy bol'nitsy (galvn. vrach - K.A.Kislitsin)

(TRACHEA, neoplasms
surg. & radiother.)
(RADIOTHERAPY, in various dis.
cancer of trachea)

MARKINA, V.P., kand. med. nauk.

1026 operations in ectopic pregnancy using the A.V. Vishnevskii method of infiltration anesthesia. Sov. med. 22 no.12:73-77 D '58. (MIRA 12:1)

1. Iz kafedry akusherstva i ginekologii (zav. - prof. V.A. Pokrovskiy) Voronezhskogo meditsinskogo instituta.
(PREGNANCY, ECTOPIC, surg.
local anesth. (Rus))
(LOCAL ANESTHESIA
in surg. in ectopic pregn (Rus))

GOFMAN, G.Ye., prof.; ZHELEZNOV, B.I., kand. med. nauk; KLENITSKIY, Ya.S., prof.; LEL'CHUK, P.Ya., prof.; MARKINA, V.P., dots.; NOVIKOVA, L.A., prof.; PETROVA, Ye.N., prof.; POKROVSKIY, V.A., prof.; FRINOVSKIY, V.S., prof.; PERSIANINOV, L.S., prof., otv. red.; IL'IN, I.V., red.; LYUDKOVSKAYA, N.I., tekhn. red.

[Multivolume manual on obstetrics and gynecology] Mnogotomnoe rukovodstvo po akusherstvu i ginekologii. Moskva, Medgiz. Vol.5.[Tumors of female genitalia] Opukholi zhenskikh polovykh organov. 1962. 314 p. (MIRA 16:8)

1. Chlen-korrespondent AMN SSSR (for Novikova, Persianinov).
(GENERATIVE ORGANS, FEMALE--TUMORS)

MARKINA, V. Yu.

Synthesis of borazole by the reaction of lithium borohydride with ammonium chloride / V. I. Mikheeva and V. Yu. Markina. Zhur. neorg. khim. 1, 2709-7(1956).—The app. and exptl. conditions are given for prepg. borazole of high purity from $LiBH_4$ and NH_4Cl with a yield of 40%. The yield, based on the $LiBH_4$, increases as the ratio $NH_4Cl:LiBH_4$ is increased, reaching a max. for a ratio of ~2:1 and then it decreases. The thermal stability of borazole was detd. and shown to be very high. It was also found that borazole could be stored for prolonged periods of time under moisture-free conditions. J. Rovtar Lynch

4E4
4E3d

USSR/Inorganic Chemistry - Complex Compounds, C

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 642

Author: Mikeyeva, V. I., and Markina, V. Yu.

Institution: None

Title: Tetraborane by the Hydrolysis of Borides

Original Periodical: Zh. neorgan. khimii, 1956, Vol 1, No 4, 619-627

Abstract: The production of tetraborane (I) by the reduction of boric oxide by magnesium and other metals with the subsequent acid decomposition of the products has been investigated. The ground metal was mixed with B_2O_3 and the mixture heated in an electric furnace; the products of the sintering were decomposed with 8 N HCl. Li, Na, K, and Ca react vigorously with B_2O_3, but the yield of borohydrides (BH) is very small. With Be the maximum yield, obtained with a B_2O_3:Be ratio of 6:1, does not exceed 0.35%. When the borides of Al, Mn, and Fe are decomposed with acid, only traces of BH are obtained. The reaction of B_2O_3 with Mg has been investigated in detail. A systematic study

Card 1/2

USSR/Inorganic Chemistry - Complex Compounds, C

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 242

Abstract: has been made of mixtures ranging from 0 to 100% of each component. The maximum yield of BH is obtained at an $Mg:B_2O_3$ ratio of 6:1. Even better results are obtained when a mixture of 22.48% of amorphous B and 77.52% Mg, corresponding to the composition B_2Mg_3, is sintered in an H_2 atmosphere at 800° for 2 hours, followed by dissolution of the product in 8 N H_3PO_4. In this case the yield of BH is 14-16%, including a 12.5-14.5% yield of I, based on total boron. After distillation and fractional condensation fairly pure I is obtained with a melting point of -121.6°. Pure I is relatively stable; in particular no decomposition can be detected after 24 hours at room temperature, and the product can be stored for long periods at -80°.

Card 2/2

MARKINA, V Yu

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour: Ref. Zhur. Khimiya, No 1, 1958, 657.

Author : Mikheyeva, V.I., Shamray, F.I., Krilova, E.Ya. - I;
Mikheyeva, V.I., Markina, V. Yu., Kryukova, O.N. - II;
Shamray, F.I., Mikheyeva, V.I., Krilova, E.Ya. - III;
Mikheyeva, V.I., Shamray, F.I., Krilova, E.Ya. - IV.

Title : Preparation of Amorphous Boron of High Purity - I;
Physico-chemical Analysis of Reaction of Magnesium and Boron Anhydride - II;
Purification of Amorphous Boron - III;
Problem in Evaluation of Quality of Amorphous Boron - IV.

Orig Pub: Zh. Neorgan. Khimii, 1957, 2, No 6, 1223-1231; 1232-1241; 1242-1247; 1248-1253.

Abstract: I. A study was made of the reduction reaction of B_2O_3 with metallic Li, Na, K. Be, Mg, Ca and Al, employing methods of thermo-

Card : 1/4 -3-

graphy and chemical analysis to the solid reaction product obtained by acid treatment. It was confirmed that concurrently with borides of constant composition, CaB_6 and AlB_{12}, amorphous phases of varying composition were also formed in large amount during reduction of B_2O_3 with Na, K, Li, and Mg. To obtain amorphous boron (I) on a plant scale, the thermal reaction for reduction of B_2O_3 with Mg is recommended which, even after first acid treatment, secures a content of $\sim$ 80% in the form of basic mixture - Mg.

II. The reaction of B_2O_3 with Mg was studied employing methods of differential thermal and complete chemical analysis of the reaction products while varying the concentration of each of the components of the reaction mixture from 0 to 100%. The basic reactions for preparation of boron by the thermal reduction process with magnesium were determined and the composition

USSR/Inorganic Chemistry. Complex Compounds. C

Abs Jour: Ref. Zhur. Khimiya, No 1, 1958, 657

for evaluation of the content of active B and of B that is combined in lower oxides utilizing concurrently ceriometric and aurometric methods.

Card : 4/4

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S/078/60/005/009/003/017
B015/B064

11.1240

AUTHORS: Mikheyeva, V. I., Markina, V. Yu.

TITLE: The Reaction of Tetraborane with Pyridine and Trimethylamine

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 9, pp. 1977-1980

TEXT: The present paper was subject of a lecture held at the VIII. All-Union Congress of Complex Compounds in Kiyev on May 29, 1959. The reaction taking place between tetraborane B_4H_{10} and pyridine, as well as BH_4 and trimethylamine was investigated. B_4H_{10} was passed through pyridine cooled to 0°C in the hydrogen current, $B_2H_4 \cdot NC_5H_5$ (Table 1) was obtained as solid reaction product, and pyridine borine $BH_3 \cdot NC_5H_5$ (Table 2) as liquid reaction product. A gelatinous mass, apparently the pyridine borine polymer is formed when the liquid reaction product is left standing, when B_4H_{10} is passed through pyridine for a longer time, or in the case of a slight pyridine excess. The experiments on the reaction of B_4H_{10} with

Card 1/2

The Reaction of Tetraborane With Pyridine and Trimethylamine

S/078/60/005/009/003/0[illegible]
B015/B064

trimethylamine confirm the data given by Burg and Stone (Ref. 1), i.e., B_4H_{10} forms three borine groups in the form of $BH_3 \cdot N(CH_3)_3$, and one solid polymeric substance is formed $[BH \cdot N(CH_3)_3]_n$ (Table 4). Compounds of the composition $B_3H_7 \cdot N(CH_3)_3$ that were pointed out by Edwards et al (Ref. 4) could not be found. The results of reacting B_4H_{10} with trimethylamine could be more easily explained if a pyramidal structure of B_4H_9 were assumed (similar to pentaborane and dihydropentaborane). There are 4 tables and 17 references: 2 Soviet, 12 US, and 3 German

SUBMITTED June 12, 1959

Card 2/2

BERG, Yu.N.; LEBEDEVA, N.A.; MARKINA, Ye.A.; IVANOV, I.I.

Effect of high pressure on some myosin properties. Biokhimiia 30 no.2:277-281 Mr-Ap '65. (MIRA 18:7)

1. Kafedra biokhimii Pediatricheskogo meditsinskogo instituta, Leningrad.

SAMOKHVALOV, A.V.; BERG, Yu.N.; LIVSHIN, A.M.; MARKINA, Ye.A. [Markina, E.A.]; KRYMSKAYA, B.M. [Krymska, B.M.]

Fractional composition of water soluble neuroglia proteins. Ukr. biokhim. zhur. 37 no.4:510-521 '65. (MIRA 18:...)

1. Kafedra biokhimii Leningradskogo pediatricheskogo meditsinskogo instituta.

BLONSKAYA, A. I.; DEMBOVSKAYA, Ye. A.; LOZOVOY, A. V.; Prinimala uchastiye: MARKINA, Z. G.

Oxidation of naphthalene and monomethylnaphthalene fractions of semicoke-tar aromatic hydrogenates to phthalic anhydride. Trudy IGI 17:182-186 '62. (MIRA 15:10)

(Coal-tar products) (Naphthalene) (Phthalic anhydride)

BLONSKAYA, A. I.; LOZOVOY, A. V.; Prinimala uchastiye: MARKINA, Z. G.

Composition of aromatic hydrogenates obtained from a semicoke tar of Cheremkhovo coals. Trudy IGI 17:187-198 '62.
(MIRA 15:10)

(Coal-tar products) (Hydrogenation)

CA

3/

Polymerization in solutions of emulsifiers under the action of benzoyl peroxide. Z. N. Markina, P. M. Khomikovskii and S. S. Medvedev. *Doklady Akad. Nauk S.S.S.R.* 75, 243-6(1950). (1) The soly. of Bz_2O_2 in soap solns. (Na salts of fatty sulfonic acids C_{17}-C_{18}) was detd. in sealed tubes under N_2 at 20°. Satn. is attained in 6-9 hrs. Relative to the amt. of soap (1.25-20% in soln.), the amt. of Bz_2O_2 dissolved is approx. const., ~0.003 g. Bz_2O_2/g. soap. (2) Initial rates of polymerization in emulsion of CH_2:$CHCN$ (I) (initial concn. 8%) in preliminarily Bz_2O_2-satd. soap solns. of 1.25, 2.50, 5.0, 10, and 20%, measured by dilatometry, under N_2 at 60°, were 0.30, 0.43, 0.60, 0.79, and 1.10 × 10^{-4} mole/l./min.; for methyl methacrylate (II) (initial concn. 2%), in soap 2.50, 5.0, 15, and 20%, 14, 9.5, 7.6, and 4.0 × 10^{-4}, styrene (III) (1.5%) in soap 5.0, 10, and 20%, 4.7, 2.1, and 1.4 × 10^{-4}. The rate of polymerization w of the monomer dissolved in the soap micelles is $w = k_1 a_1^n / v_1^{n-1}$, where n is the order with respect to the concn. of the monomer, v = vol.; the total amt. of the polymer $a = a_1 + a_2$, with the subscripts 1 and 2 referring to soap micelles and to H_2O, resp. With the distribution coeff. of the monomer between the soap and H_2O, $K = (a_1/v_1)$ [illegible] one has $w = k_1(a^n/v^n)K^n/[1 + (K - 1)q]^n$ where v = total vol., and $q = v_1/v$. At $q = q_m$, defined by $q_m = 1/[1 - K + n(K - 1)]$ (from the condition $dw/dq = 0$), w must pass through a max., the values of K (at 60°) and q_m are: I, 4 and 0.65, II, 80 and 0.01; III, 1500 and 0.001. Consequently, for I, the initial w should increase up to a soap concn. c of 65%, whereas for II and III it should fall at c higher than 1 and 0.1%, resp., in agreement with the observations. The existence and the position of the max. of w is detd. by K. At $K \geq 100$, practically all of the monomer is dissolved in the soap even at low c (~1%), and an increase of c must cause a decrease of w on account of the lowering of a_1 at const. a_2. At low K ~1-10, a_1 increases faster than a_2, over a wide range of c, hence w must increase. (3) In solns. of emulsifiers in the presence of peroxides sol. in the monomer, polymerization takes place in the soap micelles in which the monomer and the peroxide are dissolved. Significantly, if Bz_2O_2, instead of being preliminarily dissolved in the soap, is added as a solid or dissolved in the monomer, the initial rates are not reproducible, owing to the slowness of the satn. of the soap micelles with Bz_2O_2. Only in emulsion polymerization in the presence of little sol. peroxides does the process occur to a significant degree also in the emulsion drops. N. Thon

MARKINA Z. N.

USSR

Dependence of the colloidal solubility of some organic liquids on the concentration of the dissolving substance. Z. N. Markina, K. A. Prapelova, and P. A. Rehbinder (Inst. Phys. Chem., Moscow). *Kolloid. Zhur.* 16, 380-76(1954).—Four methods for measuring solubilization (visual, nephelometric, refractometric, and depression of vapor pressure) gave results agreeing within ±12% for the uptake of C_6H_6, octane (I), and CH_2:CHCN (II) by a Na oleate (III) soln. Usually, the refractometric method gave the highest values, and the values were impossibly high when marked vol. changes occurred on mixing the detergent soln. (aliphatic Na sulfates) with "oils." The final uptake x (mol. of "oil" solubilized by one mol. of III) was achieved in 24 hrs. It increased with the concn. c of III, and dx/dc was greater at c above 90 g./l. than at c below 70 g./l. Apparently, the micelles of III were different or differently connected with one another in these concn. ranges. The x was greater for polar compds. than for hydrocarbons. Thus, at $c = 90$, x at 20° was 3.65 and 0.43 for octanol and I, resp., and 10.9 and 1.7 for cyclohexanol and cyclohexane. However, x was 0.09 for $C_6H_5NO_2$ and 2.42 for C_6H_6. II had $x = 2.82$, and CH_2:$CMeCO_2Me$ 1.23. The x was smaller in K oleate solns.

J. J. Bikerman

МАРКИНА, З. Н.

USSR/Chemistry - Physical chemistry

Card 1/1 Pub. 22 - 32/47

Authors : Markina, Z. N.; Pospelova, K. A.; and Rebinder, P. A., Academician

Title : Solubility of sodium oleate hydrosols in relation to their structure

Periodical : Dok. AN SSSR 99/1, 121-124, Nov 1, 1954

Abstract : The solubility of hydrosols was investigated in a wide range of concentrations of aqueous sodium-oleate solutions and compared with colloidal solubility. The structural-mechanical properties of a diluted solium oleate solution were measured with an Ubellode viscosimeter and the properties of highly concentrated solutions by means of a Shvedov device. The relation between colloidal solubility of certain organic liquids and the concentration of aqueous $NaC_{18}H_{33}O_2$ solutions was established. The deformation characteristics of the studied sodium oleate solutions were found to be closely related with their structural characteristics which determine the relation between colloidal solubility and concentration. Four references: 3-USSR and 1-French (1950-1952). Graphs.

Institution : The M. V. Lomonosov State University, Moscow

Submitted : July 26, 1954

MARKINA, Z. N.; Pospelova; Rebinder, P. A.

"Colloid Solubility of Organic Liquids in Hydrosols of Surface Active Substances" (Kolloidnaya rastvorimost' organicheskikh zhidkostey v gidrozolyakh poverkhnostno-aktivnykh veshchestv) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp. 415-419, Iz. AN SSSR, Moscow, 1956

(Report given at above meeting, Minsk, 21-4 Dec 53)

Rebinder: Academician

MARKINA, Z. N.

4

The effects of adding organic liquids on the structure and mechanical properties of aqueous sodium oleate solutions. Z. N. Markina and P. A. Rehinder (M. V. Lomonosov Inst. State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 109, 1150–3(1956).—The solubilization of hydrocarbons or low-polarity org. liquids in aq. semicolloidal solns. (soaps) is a colloidal phenomenon, and is governed by the structural peculiarities of the micelles and the development of the spatial structure at high soap conchs. The colloidal dispersibility, being to a greater extent detd. by the micellar structure of the surface-active semicolloids, exerts in its turn a strong effect on that structure (*C.A.* 49, 2818h; 50, 14166). The org. liquids tested were of 2 kinds, and affected the colloidal properties in opposite ways: Nonpolar liquids (C_6H_{14}, $C_{10}H_{22}$, cyclohexane) solubilize the micelles and cause a thinning out of the system; polar liquids (some alcs., C_4H_9OH) thicken the soln. by converting it into a true gel, and the stiffening is caused by a bridging of the micelles by the polar mols. The thickening of the gel by the addn. of C_4H_9OH may be due to the hydrophobization of the soap micelles.

W. M. Sternberg

MARKINA, Z.N., SEGALOVA, Ye.Ye., STOKLOSA, Yezhi

Effect of initial binder dispersity on the structuration process taking pla[illegible] in the course of the hardening of gypsum hemihydrate. Koll. zhur. 22 no.2:211-216 Mr-Ap '60. (MIRA 13:8)

1. Moskovskiy universitet im. M.V. Lomonosova, Kafedra kolloidnoy khimii.

(Gypsum)

SEGALOVA, Ye.Ye.; STOKLOSA, Yezhi; MARKINA, Z.N.

Kinetics of supersaturation and tendency to form intergrowth contacts in the hydration hardening of α and β calcium sulfate hemihydrate. Koll. zhur. 22 no.4:464-468 Jl-Ag '60. (MIRA 13:9)

1. Moskovskiy universitet im. M.V. Lomonosova, kafedra kolloidnoy khimii.
(Gypsum) (Crystallization)

SEGALOVA, Ye.Ye.; MARKINA, Z.N.; REBINDER, P.A., akademik

Mechanism of the effect of small amounts of electrolytes on the strength of the crystal structure formed by solidification. Dokl.AN SSSR 133 no.3:630-632 Jl '60.
(MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
(Electrolytes) (Crystallization) (Calcium sulfate)

MARKINA, Z.N.; TSIKURINA, N.N.; KOSTOVA, N.Z.; REBINDER, P.A.

Determination of critical concentrations of micelle formations in aqueous soap solutions by the conductometric analysis. Koll.zhur. 26 no.1:76-82 Ja-F '64. (MIRA 17:4)

1. Moskovskiy universitet, khimicheskiy fakul'tet.

MARKINA, Z.N.; TSIKURINA, N.N.; KOSTOVA, N.Z.; REBINDER, P.A.

Surface activity of some soaplike semicolloids in relation to micelle formation in their aqueous solutions. Koll. zhur. 27 no.2:242-249 Mr-Ap '65. (MIRA 18:6)

1. Moskovskiy universitet khimicheskiy fakul'tet.

MARKINA, Z. V.

MARKINA, Z. V. -- "Blood Formation in Various Forms and At Various Periods of Malaria." Saratov State Medical Inst. Saratov, 195[illegible]. (Dissertation for the Degree of Candidate in Medical Sciences,.

So.: Knizhnaya Letopis', No. 6, 1956.